Notebook, N-99-02-14

The one dated entry in this notebook is from February 1899. All entries are by Edison. At the beginning of the book are notes and drawings relating to electric meters. Most of the book contains notes and drawings pertaining to cement rock and the production of cement, including cost estimates for cement manufacture. There are also notes regarding the production of phosphoric anhydride and phosphoric acid, possibly as a by-product of Edison's ore milling and cement technologies. The pages are unnumbered, and several pages have been removed from the book. Approximately 120 pages have been used.

N-99-02-14

250000
85000
3.35-000

Meter

200000

2062.5
13.75
6875
15
13.75

13 3/4
12 40
620

200

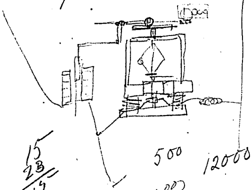
100,000
2

Lamphouse
13

250,000
25
10
12
297.42

250
400
1001
500

Feby 14/99

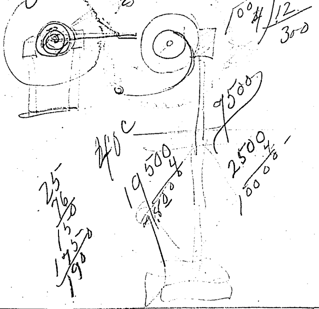


15
23
45
30
345
22

500

12000-

12000



25
40
100
4/12
300

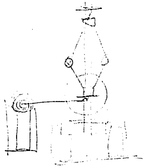
9500

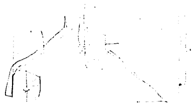
40c

19500
4
78000

2500
4
10000

25
76
15
1750
190





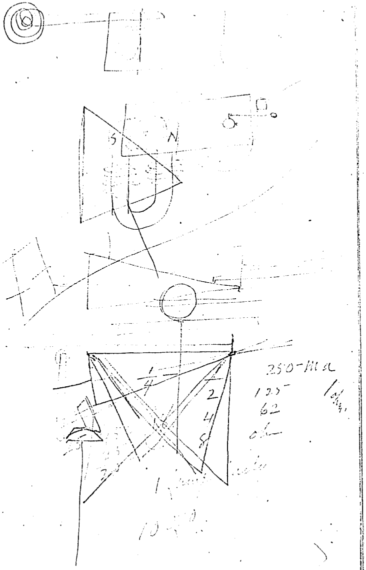
260)2500(

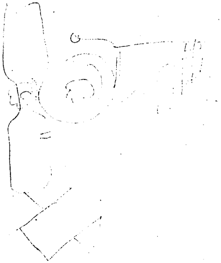
260 –

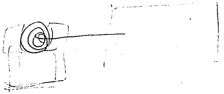
450

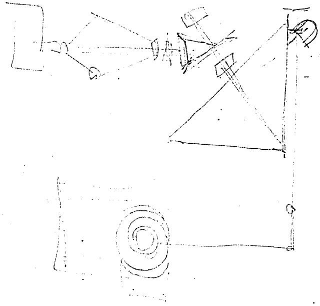
40

20 mil amp


S
N
1/4
2
4
8
250-ma
125
62
1
10







1162
455
1617 / 7800 (48
6468
13320
12936
40

1617
78
9417

78) 1617 (20.6
156
570
56

9379 (64120 (68,5
56274
78460
73032
54280

9417 / 78000 (82
75336
26640
18834
7806

9417 / 16170 (17
9417
67530
65919

2170 (64120 (1162) 78360 (6,76
6972
8644
8130
8.44

217) 64120 (295 8.90
434
2072
1953
1190

84.04
8010
3940
3160
35600
380
3

	Si	al	Ca	Ca Relation
2,52	8.90	3.33	84.04	9.44
172	1162	455	78	82,8
.84	2170	797	64.12	68.5 al

1,6
.62

10850
1594
12444

1594
12444
6412
6032

2170
797
2967
6412
9379 (64120 (68
56274
78463

6

7
12444

333 / 8404 (252
666
1744
1665
790
79

22
7
29 (70 (24.2
580
1260

455 / 7836 (172
455
3286
3185
1010
101

797 / 6412 (804
6376
3600
36

1162
455
1617 (4550 (28.1
32340
13160
12936
~~2240~~
2213

3330 (27
2446
8840
8561

2170
797
2967 (7970 (2.6
5934
19360
17802
15580

111-1 27% al to S.
111 2 28.1 "
111 4 27.6

18' 1200 ft

~~1050~~
200

1 ft	1200
2	600
4	300
5	240
6	200
7	171
8	150
10	120
12	100

500 ft

800 (25000

16) 400
3200
3200

40
200
800

		Si	al	Ca
114	Hole 1	1617	733	7152
114	3	1422	877	73.31
114	4	1558	812	72,01

1422
877
2299 (8770 (3.8
6897
18730
18392
1837

200
300
500
150
50
1200

38
31
34

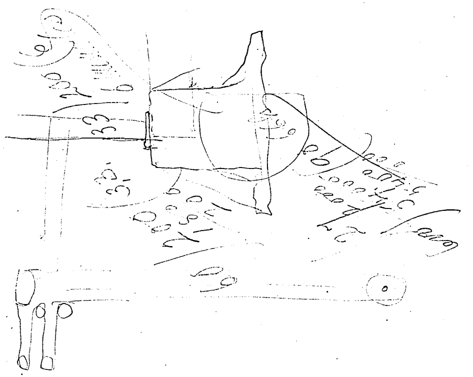
1617
733
2350 (7330 (31
7050
2800

7110
1754
8864
7331
1533

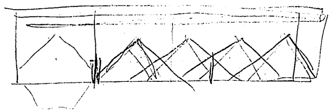
8075
1466
9541
7152
2389
1533

1558
812
2370 (8120 (34
9110
10100
9480

7790
1624
9411
7201
2210

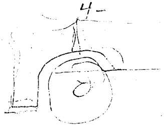

60
200
1800
3.3
33
200
27
2000
5400
6000
98
66%

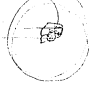
50



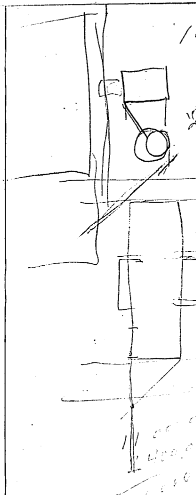
62
22
7
91

66
46
346
[illegible] 6
[illegible] 3
30





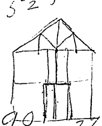
23 51
7 al
2.35 [illegible]
66:10 Ca
.67 [illegible]
80 [illegible]



100

475
50
525

27



90
28
720
180
2520

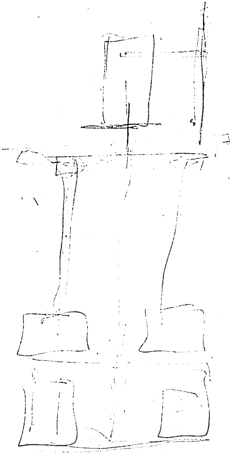
27
90
243

2475000

2400000
[illegible]
144
11
144–

11 000 000
11 000 000
8,0 000000
140

9000
55
450
450
2)49
2147 3



60 Rod –

16 ft [illegible]

20)893(tons
80 (44.6
93
80
130

47 tons hour

5000

Architect

1000
2000
2240)2000000(893
17920
20800
20160
7400

47
2
94 - Deacons

10 50

400 ft/min — 36
12
72

36 2 / 127 / 1728. (34.
43
34
168
24

50
150
228

34

13 lbs

500 ft/min

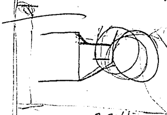
500 — 180 Cu

6200 —

3100

2000 / 300000 (5000
60
300.

13 / 5000 (384
39
110
110



384
13
1152
384
4992

1728) 10368
3

620
310

5) 2170
4.34
17.36.

5) 797
1.594

5) 84
17
67.

17.36 1.59. 67

21.7 cooling

7.97 " cal

64.12 " ca —

102
42
4000) 14400 (3.6
12000
2400

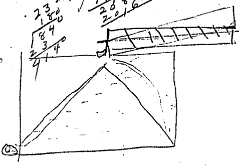
4000) 4180 - 1 Cent

1
90
180
720
90
(89) 1020

4000
50
2240) 20000
17920
20800
20160

23
180
84
2340
41

21
180
168
21
3780



900
25
4500
1800
22500
21
2250
2250
4500
47250

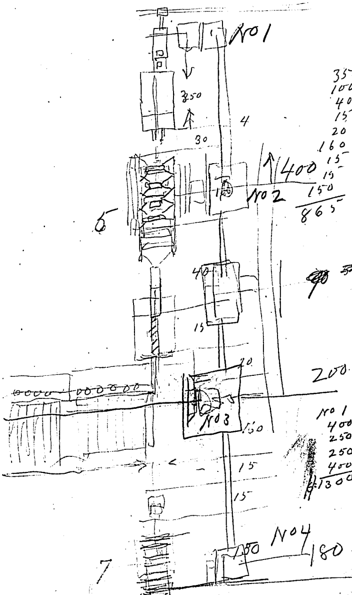
8

32
5
160
24
640
32
3840 - 15

48
144
192

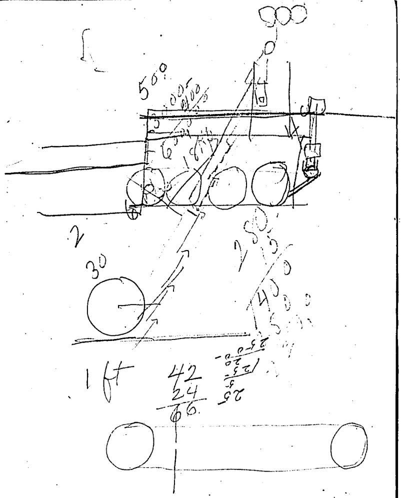
192

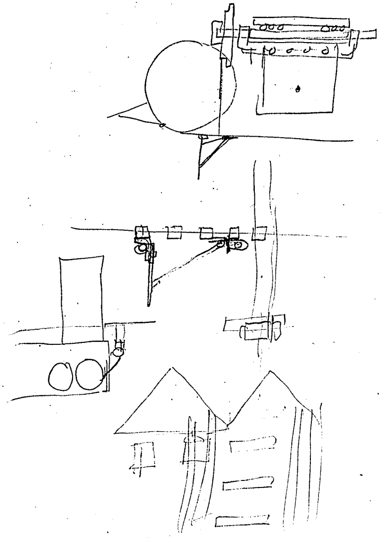
18
8
144


No 1
350
4
30
6
No 2
400
40
15
20
200
No 3
150
15
15
No 4
150
180
7

350
100
40
15
20
160
15
15
150
865

No 1
400
250
250
400
1300


50°
1 ft



375

4000) 42500
40000
25

(16 $\frac{1}{2}$
4
190

20 $\frac{1}{2}$

200

3

4c

5
8
3
16
180
32

2

800

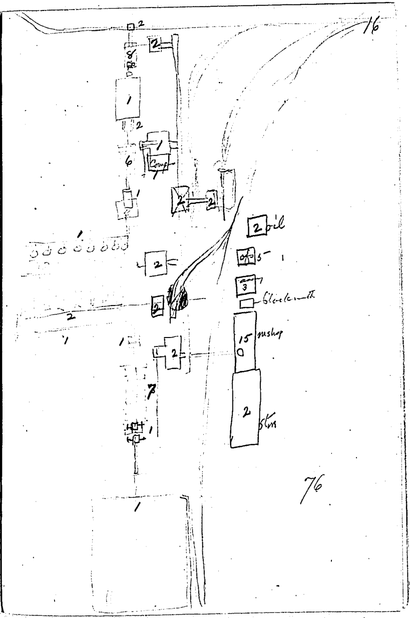
26
5
130

77
180
6160
77
138,60

76
180
6080
76
136,8

138 $\underline{60}$

150


16
2
2
8
1
2
1
Comp
6
1
1
2
2
1
2 bil
2
ofs 5
1
3
1
Blacksmith
2
2
1
1
15 mshop
2
1
7
1
2 Stm
1
76

125
125
625

125
125
625
250
125
15625
125
78125
3125
15625
1953125

125
8
1000

12

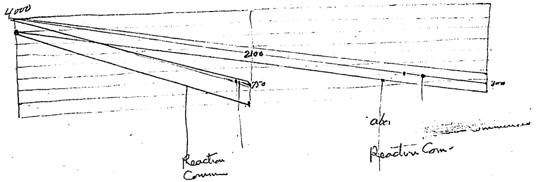
120

8

24 —

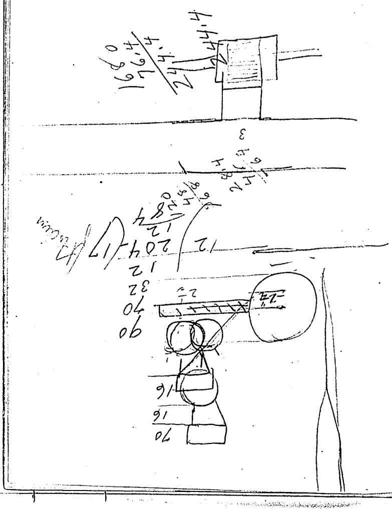
40 to 1150 —

2 million



100 deg 24 sec
7
(60) 168 (2.8
120
480

Reaches Reaction in about—
4 m in long
2 min in short.



S.
1268

al
102.2

369829

369829
126800
1022
497651

102)1268(124
102
2440
2040
440

62.79
693
1967
89.39

1268)3998(36.04
3804
194 2114
19348

19.49

630

126
378
102
204
810

102
204

126
378

27½
54.2
48
21

378
204
58

2114
60
12684

102)1980(18.6

24 sec. per 100 deg

35
24
14
7
60)64
60
4

28.4
66.04
56
39624
33020
369829

28.4
32
60.4

27

4640
1323
5963

27

21
28
48
4240
4693
533

2320
[illegible]

5929
1323
252

2212
630
693
1323

2114
28
1691
[illegible]
7010
705

21.14
28
1891
[illegible]
669
660

630
110
630
693

2114
6342
63
126

10. 12

10 h 400. ton

175
16
1050
175
2800
2
65

50

100.
600
600 300
30000

65 2/175.
87

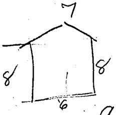
165
15/260 (173
150
1650
50

100

2114

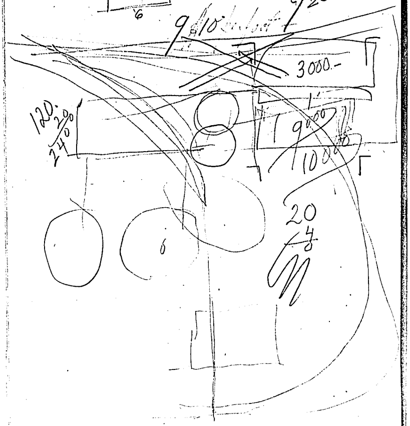
6 Al₂O₃

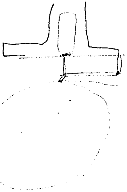
CaO
6.044



Penny 120
Strudel 100
250 -
25
50
1 75
720

30
4
120 -


9 10
3000.-
1'
9000
1000
120.
200
240
6
20
4
0



2200 lbs -

```
20 ) 720./36
     60 0/ 22
     12    92
          72
          79 2
```

1 Ton 60 per ~~1.00.~~	1.00.
Crushing to rewash & rewashing	.03
	.03
Drying -	.08
Crushing to 150 mesh -	02
Acidifying -	.03
Handling Tails -	
2200 lbs 50 Baume acid)	7.92
at 7.20. ton	.02
Steam -	01
Water	03
filtering -	
Evaporating - 12000 lbs water	1.50
2 Cordswood - 75c	05
~~Melting~~ Melting -	05
General on 2000 tons	15
Wear & fuel	03
Ins taxes Etc }	
Depen -	
	1095.4

2.65

28
1 4
20
282
560-

2900
265
2635

850/2240 (2.63
1700
5400
5100
3000

615/1100 (1.78
615
4850
4305
5450

263
11
263
263
28.93

850/1100 (1.29
850
2500
1700
8000
7650

Product
615 lbs phos anhy.
850 lbs glac phos acid -

at say 11.00 Longton

1.78 cents per lb of anhydride
1.29 " " glacial -

Requires 2.63 tons 60% Tri Calp
to make ton glacial -

Cost 28.93 per ton glacial

Ton glacial contains
1617 lbs phos anhydride

2240 Ton contains 73½% phos anhydride
Short Ton 80.8%

14) 500 (36
420
8

263
6
1578

72.4
36
4344
2172
26064

6) 300
5

500

nearly equals 6 tons of
14 unit phos sold at
$7 mill —

at 4 dollars ft —
for Super of 14 :
+ $3 for glacial —
for 14 units ft only 50 cents,
Frt to Germany on
2.63 tons 60% is
1578 —
on 1 ton glacial —
6 dollars —

There are 72.4 units in ton
glacial —

500
1 50
3 50

14
1 4
1
14
15 4

45
600
270
2 60

14 (1

27) 300 (11
270
30

14) 350 (25
280
70

It cost Charleston make
25
~~20 cents per unit of phos~~
~~anhydride to make in~~
~~form of 14 unit super~~

1,50 for rock to make enough
Super carrying 14 units phos
anhydride – as they sell
to 6 at 7 – + pbly make a
profit of 2 – leaves
$3^{\underline{50}}$ for mfg or a cost
for mfg ~~cost~~ of 25 cents a
unit or

presumably it costs this in
England –

Cost of glaecal in England
dead cost $36^{\underline{00}}$

72.4
8
579.2

263) 579 (22
526.0
53

2

263

73-

14
6%
84

52

14
52
28
70
7.28

or say 52 cents per unit
any part of England or Germany
Dry mixing with chalk to
14 units would cost,

Chalk 25
Mixing 5
30
14 728
7.58 - at farms

dead Cost

If we add 8c unit profit
it would make it 60 percent
or 870 at farms as
Cost to seller -
or a profit of 2.20 per
ton of 60% rock to us

14) 260400 (11.457

14
24
14
66
56
80
70
100

25
285
572
2291
4
5
8864
350.

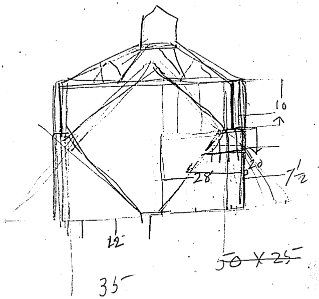
28

420 ft long

28
20
560
420
11200
22400
235200
252000
260400

420
60
25200

18600
40
744000



350

14) 260400 (18,600 15 X 6

140
120
112
84
84
140

30

4650–

72 2,63

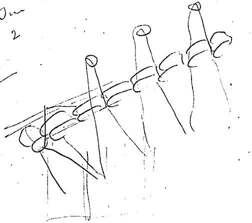
2

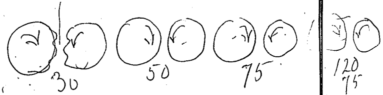
458
80
0
72) 36,64 (50,9
36,0
6,40
6,48
6

36 44–

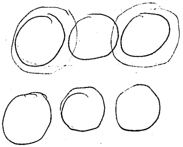
1425
2
0–
2850
1600
600
4450

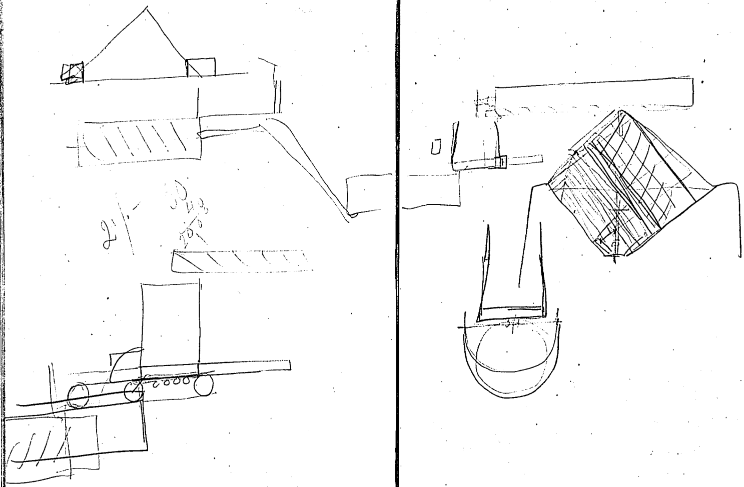
1 2 Jun
3 2
4
5





120
75
50
30
275




2'

25
5
125
800000
3
375
1500
25
7500
3000
37500
3750
33
43
55

25
30
50
25

15000
75

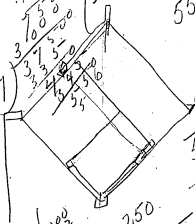
558

558
1750
16.5
55078

25
74
100
100
175-00

16500

67

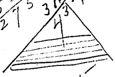


67
9
603
8
520
278
27

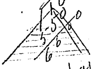
250

25
30
55
275
2

36000
12
72000
36000
3
43



275
24
1100
550
66



day

275
550
1375
1375
15125

1512
24
6048
3024
36288

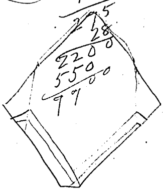
260
6
1560
3

50
125
100
245
28
2200
550
7700

25000
3
75000

26

41650
12
83300
41650
499800



2600

550
520
11000
2750
286000

260
180
2080
260
4628
3744
936
930
131

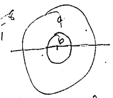
15000
7700
22700
4290
26990

2860
24
11440
5720
68640
26990
41.650

550
230
1650
28
990
330
3329

2 1 4
470
149 8
856 8
1005 1

192) 412 (~~2~~
384 0
28 0
172 0
88



33

16
12
32
16

) 6848
2

1
1500

48
39
432
432
144
144

18.

36

8) 250
32

250
3
192) 756 (3.9
570
1248
1728

300

50) 6340
1268

15 | 44

600

3 3

24
130
60
14.

16
12
32
16
9

48
4
1920

14
21
32
42
4
66

550
75
225
385
4

250
120
500
500 (200
15) 300

5) 1268
254

12 dia – $\frac{1}{16}$ wt 1875 lbs
1000
Spiral – 1800
Ends+shaft – 5 / 4675
935

Torque of Turning 935 lbs
at ½ center – $\frac{1}{5}$ ft/ – 250 ft/min 2 HP

Load 4280 to feed 20 if excess 50% 6340 lbs min
$\frac{1}{5}$ being friction – 1268 lbs friction at 9 3/4 Hp
bottom to shove this forward $\frac{1}{5}$ of this 8½ Hp
254 lbs

Speed of 3" shaft at 100 Rev 25 ft/min
6000 lbs torque at periphery of foot

9.75
8.50
2.00
20.25

6.

33000 20
25) 660000 (22,400
66
500
60
500
100

2

3

10000
60000 (428
1400) 60000
5600
4000
2800
1200
1

2600
144

250

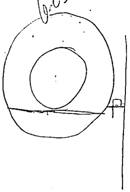
160

50C foot
80
120

18
250) 2000 (8

8 lbs food

60.



3000
2000
1400) 60000 (4280
5600
4000
2800
12000
11200

.48 28

24

30.

4600
27600 (69
975
25
4675
1870
2337
6000 (150

24
30
12) 72

22
3
66

254
1100
25400
254
277900 (8
264

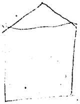
1268 33000
250
6340
253600 (9
33000) 317000
297
20000

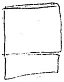
254 lbs

34
30
64

6 ft

42
24
66





4370 lbs Silica
158.6 " Al
1282.4 " Lime —
1219.8 — Required

2000) 3097 8 (1,548
2000
10978
10000
9780
8000
1780

(1800 lbs yearly

1,54) 1219 (790
1078
1410
1386

75) 135000
75
600
600

790 lbs

450 tons 75
300
135000

75) 135000
~~9288~~

30
400 (75
16) 120
112
8

2.17
7
15.19
557

.797
7
5.579

7595
1114
8709

793
20
158.60

Si
13.02.0
4782
238

1302
478
1780

6412
20
128.240

21850 Lime for Si
3172 " Al
25022
12824
12198. Require —

6510
956
7466.

1' 20 5-3

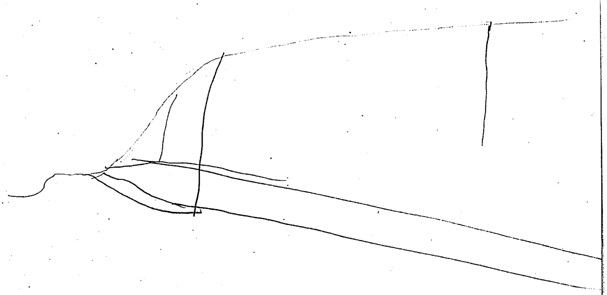
166

100

25% — 67 116—

67

49—



180 inches
3000
340000

6 to

250
12
500
250
2500
9 | 20000
400) 220000 (5
2000

6 | 93000
400) 1550000 (3875
1200
35000
3200
3000
2800
2000

400) 100000 (250
800
2000

9 | 13124
9 To. 3400) 145800 (360
1200
2580

50 | 40000
400) 80000 (200
8000

.41 .52

9 | 3200
400) 35500 (89
3200
3500
3

6 | 4000
400) 66600 (170
4000
266

32 00 -
6400
3
19200 -

9 | 12000
400) 133300 (335
1200
1330
1

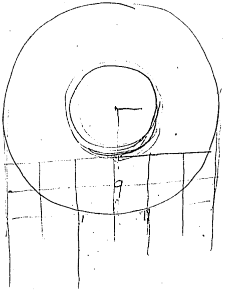
W

50) 192000 - (3840
150
420
400
200
200

8

400) 384000 (960
3600
2400

45
5
22,5
8
180,0
1



1600
400
23700
12
27) 6400
5400
1810
1890
1891
Concrete 4400
2370
2000

11000
3000
3000
10000
39000

3) 13000
26000
5870
1174
2000) 2600000 (1300
2000
6000
6000
50
6) 90000
15000
4) 12
3
300
3600
7000
42

Stone
40000
25000
40000
20,000
125000
10000
40000 (80000
400
400) 8000 (200
150
62
2

1300
125000
150
6250000
125000
18750000

800
500
600
600
1300
500
600
600
400
800
6700

6700
6
38400

Cement	12000
Sand	700
stone	3500
Rubble –	1000
	17200 –

Labor – Stone 10000
Concrete – 6000
16000
17200
$33200

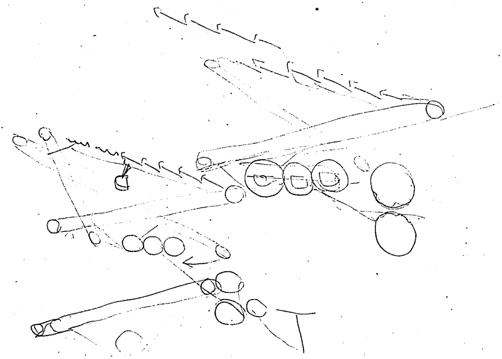
grading + digging $5000
$38200 –

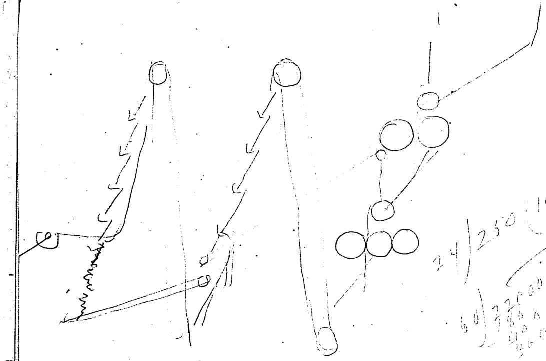
1728) 540000 (312
5184
2160
1728
4320

312
50
2000) 15600 (7
14000

1400
7
9800 –
14
7
98

3) 180
60





24)250(10

60)22000(360
180
400
360

3

.50—

15

8—

15

15

75

3

1375—

800

375

425

6

1800

1500—

125—

45

60)4000(66 Comm—

3600

400

800—

2000

15000

45—

2000

9000

4)9000

4500

2500

9000

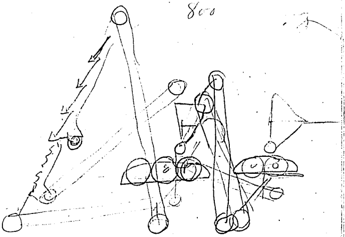
60)17500(291

120

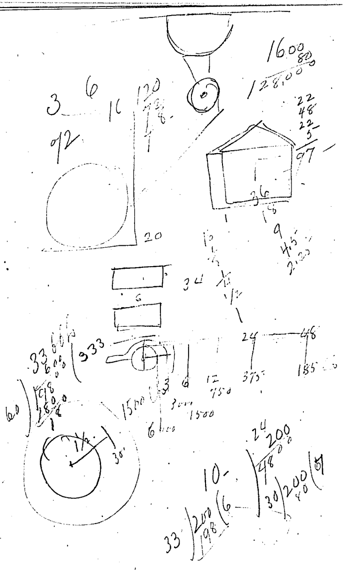
550

540

100



80
20
240,000


3
6
16
92
120
1600
800
128,000
22
48
22
5
97
36
20
9
4.5
2.25
34
6
24
48
333
33
600
18
1800
60
1500
3
6
12
750
375
185
3000
1500
6000
1½
30
10-
24
200
48
30
200
40
33
200
198
6

40 —
45 12.50%
51-25
6 40
57 65
7 02
7 7
64 6
8 08
72 75
9 08
81.83

13
4
2

125
4
500

125
45
625
500
5625

5125
125
25625
10250
5125
640625

576
125
1152
1152
576
70272

6467
125
32335
12934
6467
80.8375

727
125
3635
1454
727
9.0875

8

5 /2000

21

5

10c

115000
4
460000
1.2
920000
460000
552000

40c

120-

3412
41
12
3448
12492
68

40-

480

.40

127
80
1016

80

101

346
40
404

16

2

120
460
720
460
552.00

40
55
200
220
2420

40
24
16-

780.

200
135
1000
600

16c

4.

58

60

30.
24

34
12
70
35
420

75
12
150
75
900

1.27
60
7620

36.00
200
7200

38
2
7.6

38 amp

633000) 3400000.0
3165000
235000 (53

115
4
460
80
36.800
60
600
550
850

460
12
920
460
5520
3680
144

)68

3

7
6

180) 1200
1080
1200 (6.6

120
5

7-

150

53 miles

68
190
.60
6120
68
12920

115
80
9200
9

1360

5280
120
105600
5280
633600

17
2000000
3400000

746) 12920
7460
5462
5222
2380 (17.3

3244
1.5
16220
3244
4866
297.9
10000
27176 (13.
3500
75200
150400
3760
135
240
540
270
3240
2240 (10
364000 (160
24
12000
1720
3440
13
26
3120
624
10000
16000
3200
3300

~~Loss on Big cylinder 1" magnesia 135 ft~~
~~long 3244 sq ft 400 deg - 13000 heat U min~~
~~or about 75 lbs coal of bare~~
~~as Bare 10 times more or 750 lbs Coal~~
~~per hour - on 20 Roasters~~
~~This would be 160 tons daily 350 tons~~
~~or 100 [illegible] assuming if covered~~
~~it would be 1½ ton daily + 37 daily~~
~~= 11000 year Hence the [illegible] to [illegible]~~
~~with only 3" mineral wool —~~

3244 sqr ft —
1.5 BTU per ft 1" mag per min. 400 deg
13 lbs 312 lbs day 20 roasters
3 tons daily — Bare 30 tons

18.4 lbs per amp
1 cell

190)3500(18.4
1900
1600
1520
800

38)133000
114
190
19

75
~~1 mile~~
3500

74 —

1800
74
7200
12600
133200

Melted Rubber
Linseed ox by Nit acid -
Bird Lime -
Molasses
Honey -

68
160
4080
680
10880

4200) 200192 (47
168000
32192
29400

4200

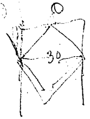
10880
184
43520
87040
10880
2001920

5

25 160

50

25) 100



30

30 30 30

90

2 20 20 20

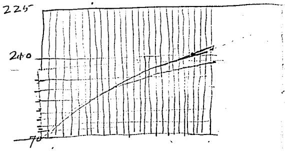
40

19

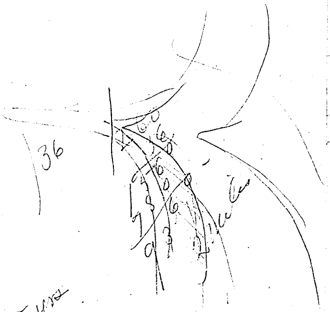
2000-
4000-

60 140
50
7000-
6

1300
330
1630


225
200
70

36


60
60
60
60
60
4
8
9
9
3
2

5 yrs

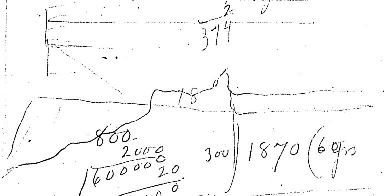
15000
30
450000
20
30- 9000000 (562,500
16)9000000
80
106
96
40
32
80
80

562000
1124000
0
1200)1686000 (1400
1200
4860
4800

90
2000
1800000 20
16)3600000 (225000
32
40
32
80
80

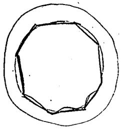
1200)225000 (187
1200
10500
9600
9000

187 days
2
374



800
2000
1600000 20
300)1870 (6 yrs
3200000
15
800000
20)12000000 (60000
120

130 Tons



400000
60
2400.0

400
240
160
4 M

23
3
69

150 Tons
/10
530

800
25

5- 25
75
100
160
10

1 30 50

2 months

130
23
390
260
2990

1

75
60
135
1 5 months

3000
400)15000 (37
1200
3000
2800

14/80 (

724/3600 (5
3620
73

20) 16174 (80.8
160
144

178
20
3560
14
14240
3560
49840
42
30
12

16

200

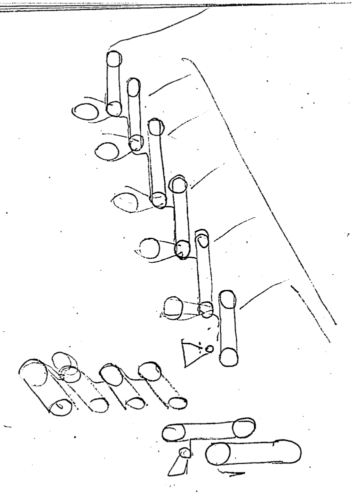
7.

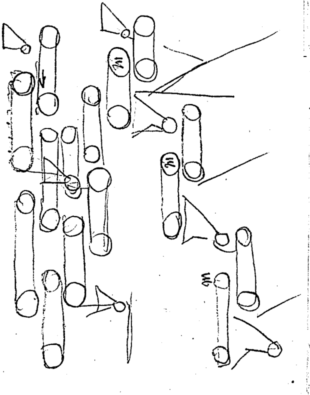
498.

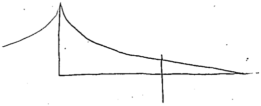
3

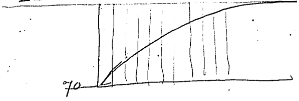
615
263
1845
3690
1230
161745 (73.5

22) 1617
154
77
66
4
11








220
70

26660-

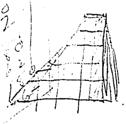
2
120
100-
2000-

27 | 720.000- | 26666 | 27

540
182
160
180
120

15

25
12
50
25
300-



200

600-

300-

6

1200
600-
72000

55

520-
8
208

60
200
2000-
2
24.000

1000
2080-

20 picis-
16
36

8 100

22000
60
32000

25
20
12500
60000

27 | 120000 (4444
108
12
108
120
108
120

4444-

13

2500-
4200
6700-

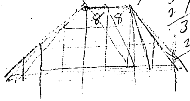
27 | 600000 (22222
54
60
54
60
54
60
54
60

21000
20
42000

1200
70
10
35
840

27

84000 (3111-
81
37
27
30
3
27
3



8 8

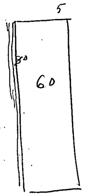
45000
20
900000

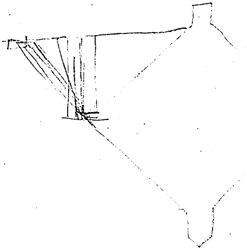
14
64
56
846
64

2 1200
1800 (44444

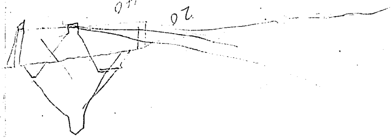
27 | 120000
1080
138
120
108

for 5 seconds - 5/1000 at
80 - 5 sec more 90





2240
72
0
[illegible]48 0
1568 0
3.5 [illegible]
3.5
0
5060
[illegible]

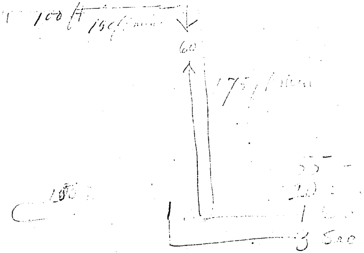


2 1/2 minutes—

60)600,000(10

10 tons min

25 tons


100 ft
150 ft/min
60
175 ft/min
25
1
3 500
20

200

1500/500

60)149(2 min 1/2
120

1500

4000
50
200000

100

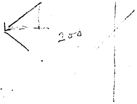
12

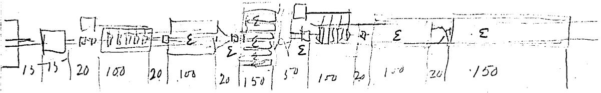
12

2476 666

12)4800 (400
48

4




Σ
Σ
Σ
Σ
Σ
Σ
13
15
20
100
20
100
20
150
50
150
20
100
20
150

880 ft-

250
60
15000

250
100
25000
20000
5000

(12

12
20

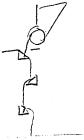
1200 300
50
15000 (5

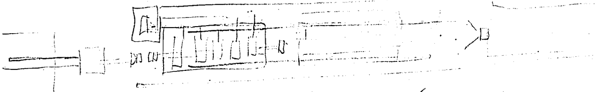
12
60
720 - 3500
12000

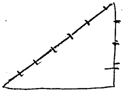
12
2400000
50

18-
5-
10
33-

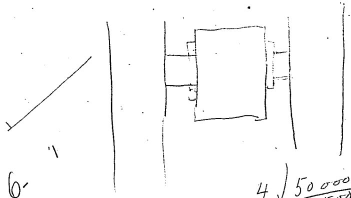
4/128
3



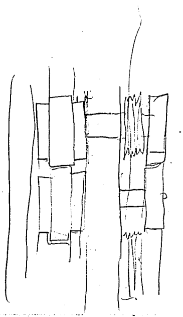


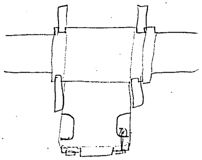


18
12
36
18
12)216 (18 ft.
12
96



4
33000) 50000 / 125000000 (3~~8~~0
99000
2600000
264





$107,350
102,750
4,600

~~30000 30900~~

np 51500
up – 51250
102,750

103
3000
30900

103
500
5150

5

10250
500
512500

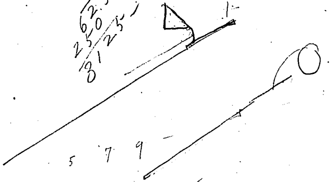
103

4

2

104

1.25
25
625
250
3125

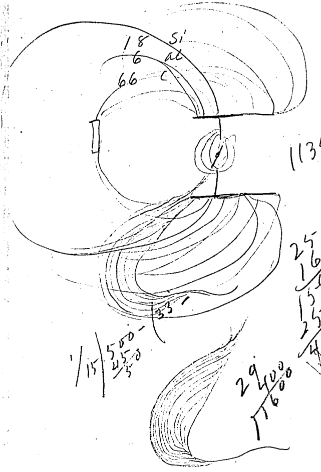


5 7 9

7.9 12 12 15 3 4

7 8 10 2 3

1 2


18 Si
6 al
66 c
33'

11340

25
16
1/0
15
25/0
40

1/15 | 500-
450
50

29400
176

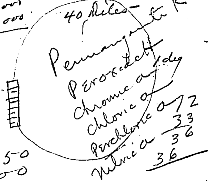
1 — 50
2 — 100
4 — 200
8 — 400
16 — 800
32 — 1600
64 — 3200
128 — ~~12800~~ 6400
256 — ~~25600~~ 12800
512 — 51200
1024 — 101000
2000 — 202000
4000

50
100
200
400

368

50 000 =
250 000

0

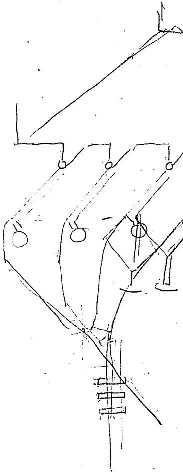

40 Riles -
Permanganate K
Peroxide acid
Chromic acid
Chloric acid 72
Perchloric 33
Nitric acid 36
36

186
88
55
39
31 366-
31 3
28
21
18
16
12
9
8
8
7
7
6
6
5
5
4
4
3
3
2
2
1
1

1 — 50
2 — 100
4 — 200
8 Double length twice Magnetic [illegible]

10 — 500
50
500 — 50
100

Van Emp
[illegible] - Confined
Darling Plain Current



10000

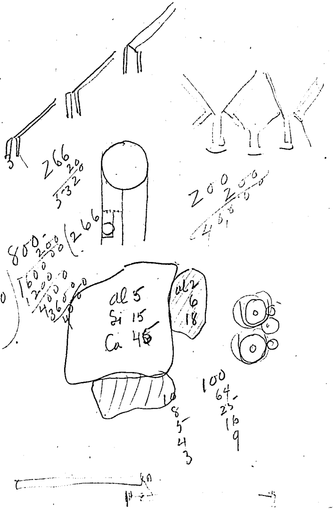
600)80000(133

600

2000

1800

1·2


3
al 5
Si 15
Ca 45
al 2
6
18

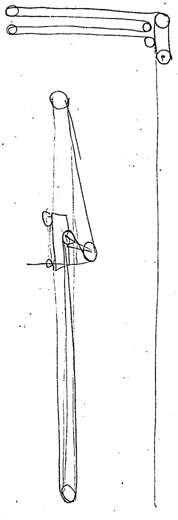
266
2
532

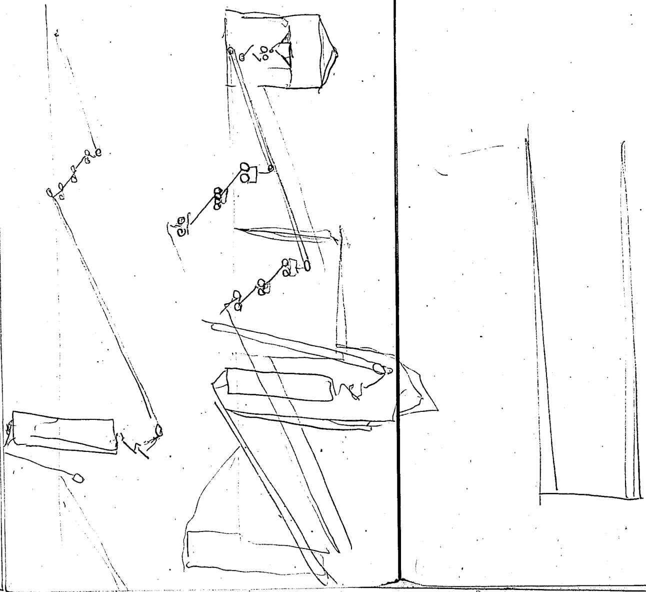
200
2
400

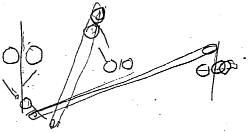
600)160000(266
1200
4000
3600
400

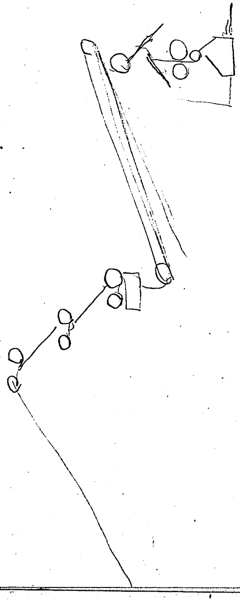
100
64
25
16
9

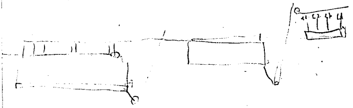
10
8
5
4
3

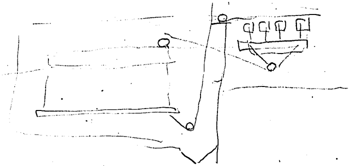


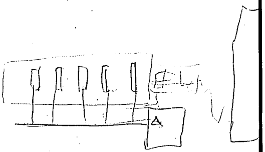


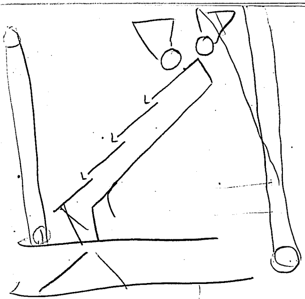












8 12000

1500

110
95
550
9900
10450
~~12~~850
10735

95
3
2850

85 | 2500 (29.4
170
800
765
350
34

750
45
3750
3000
33150
2940
2600
5850
1300
19100
1125
786

65 | 1125 (17.3
65
475
455
200
195
5

3260
3125
135

1690
150
100
450
200
60
4795
3125

1690
225
10
25
10
1960

46
2
92
46
552
225

46 | 777 (~~17~~16.9
46
317
276
410
41

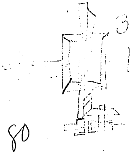
1690

15 Hp to buck —

5 Hp hours

900 Hp minutes —
33000
29,700,000 ft lbs —
1 Hour —

7
22



3 Hours
15.6

25
25
125
50
625

15.6

80

40 Hp hours
5625
5625
43.75
4/493.75

800
450 (15.6
80) 1250

150 lbs —

30
5
150 - 1200
150
2700

3 18

20 Cubicft 3 hours
80 Cubicft

493.
25
2465
986
12325

12.5 Cubic inch
per stroke —

1.25
300
375.0 Cub.

120
2835
9400
948 Min Minuts

1728) 3750 (217 —
3456
2940
1728
1212
1119

2.17 Cubicft
60
20) 130 (6.5 hou
120
100

6 1/2 Cft of 2000 lbs air

Supplies -

Steam Coal	50.00.
for clinker	198.00.
Oil -	12.00
Waste	2.00.
CP Supplies -	50.00.
Clinker rolls -	35.00.
	8.00
Screens	50 00
Lining Cylinder	150.00.
Genl Wear	15.00.
Dryer Coal -	20.00
Insur—	12.00.
Taxes -	12.00.
assay office	40.00
Shipping -	
Mach Shop Suppls	50.00.
General Exp	100.00
	804 00

4000) 80400 (20
8000
400

800
3
2400

200
2240) 48000 (22
4480 220
3200 44
[illegible]

220
90
198.00

50
40000
2240) 200000 (90.
20160

10000

6 600

600 lbs on level —

4 m hour = 352 ft min

6.4 Hp

5280
4
21120

352 friction 33% —
say 8 1/2 Hp —

352
600
33000) 211200000 (6.4
198000
1320
1320

3)46
15
6.4 miles —

50 ft — in

5 ft in

89600
8960
33000) 132000 (4.6

8 1/2 Hp —

grade 5 ft in 100

hence rise at 4 miles hour

17 ft — 4 ton

4.6 Hp but 66% efficiency

6.1 Hp — hence

8.5 — strait

14.6 — Hp —

1400
,12
2800
1400
4000) 16800 (4,2
16000
8000

for 4000 bbls Crude rock
$168.00—
4,2 Cents bbl—

$130 Other wages
3,25 bbl — 1 shift
7,45
3 00
0,45

4000/13000 (3,25
12000
10000
8000
20000
20000

$10\frac{1}{2}$ Cents

Say ~~[illegible] Cents~~
Wages cost
all others $20\frac{1}{2}$
31 Cents bbl—

[illegible] 1 Shift

1¼ Double [illegible] –

2 [illegible]	400
2 in Coal Crushing	350
2 Oilers –	300
1 Scraper –	175
1 Cleaner –	125
1 Clinker	150
2 Liners –	400
1 Mixer man	150
1 Under stock house	150
1 Weigher	200
1 assay boy –	100
2 Roll men	300
1 Screen	175
1 Conveyor & Elev	150
Clinker Roll 1	150
2 3H Clinker –	300
1 Screen	175
1 elevator	150
1 Roll turner	250
1 assist –	150
	4300

2
7

	4300
1 Stock House	150
4 Cleaners	500
1 Screener for tiel,	125
1 Engineer	300
2 firemen	375
1 Coal passer	125
1 Loco yard	200
1 Brakeman	150
5 yard men	750
1 yard foreman	250
1 Carpenter	225
15 Machinist	2250
4 Helpers	500
2 Oil house	325
1 Electrician	300
1 Pipefitter	250
1 Storehouse	150
1 Mach Shop foreman	350
1 Supt	1000
1 asst Supt	500
	129.75

$129.75

2
5
5

10c ton — 1400 ton —

Cp [illegible]

[illegible]	1,50
Under	150
3 Rolls	450
Dryer fan	200
Dryer	150
Top	150
Top of R	175
[illegible]	125
[illegible]	375
Bag —	100
[illegible]	200
Carman	150
	23.75

1.69 — per ton labor

1400/2375 (1,69
1400
9750
8400
13500

Say 12 Cents

99
2
158
30
50
238

921
15

4000) 19800 (49 5c
16000
3800.0

150 lbs per ton

Truck 2 4
Load 2
60

40 cents —

175 ton

125
50
75
7.4000
300.0

23
9
207

400) 2240 (5,6, 2 9
2000 31
240 56
168
1736

207
3000

1000 lbs [illegible]